

## **Chapter 5: Solid Waste Management System Plan of Action**

This Solid Waste Management Plan is a planning document for the County government. The Plan is a dynamic document that may be amended by the County government if and whenever the County finds it necessary or appropriate. The County will review and, if necessary, update the Solid Waste Management Plan at least once every three years in accordance with a schedule established by MDE. The scope and content of the Plan is written in accordance with the requirements in COMAR 26.03.03.

The preceding chapters include the best available estimates of the amount and kind of solid waste produced, the amount and kind of solid waste expected to require management during the planning period, and the constraints which are imposed on the site selection, construction and operation of solid waste management facilities.

This Chapter presents an abstract of the pertinent County policies and actions taken in response to its responsibilities. It is organized into the following major subsections:

- 5.1 General
- 5.2 The Solid Waste Management System
- 5.3 Adequacy of Existing System to Handle Waste Streams
- 5.4 System Financing

### **5.1 GENERAL**

#### **5.1.1 Definitions**

A number of terms and acronyms, as defined in Appendix A, are used in connection with the County's solid waste management system. For the purposes of

this Plan, these terms and acronyms shall have the meanings ascribed to them in Appendix A.

### **5.1.2 General Solid Waste Policies**

Detailed policies and plans of action describing the County's strategies for managing each solid waste facility and program appear later in this Chapter. The following statements reflect the general solid waste policies of the County:

#### **5.1.2.1 General Solid Waste Management Policy**

a. The County's solid waste management preferences and practices shall be guided by the principles of sustainability. That is, actions taken today should be those judged least likely to make life more difficult for future generations. In keeping with this principle, waste reduction is the most preferred solid waste management technique, followed by reuse and recycling, then controlled combustion with energy recovery, and least preferred, landfilling. This general hierarchical policy has the following specific elements:

(1) The County, within its practical scope and range of effectiveness, should undertake to affect all waste reduction measures feasible.

(2) All waste reuse and recycling measures should be implemented which are practical with available technologies and reliable markets and that are not significantly more expensive in the framework of sustainability than the waste disposal measures that would otherwise be needed. Changing technologies, markets, and sustainability considerations should be reviewed regularly so that waste reuse and recycling may be expanded as new opportunities arise or, contracted if markets for particular materials disappear.

(3) For MSW remaining after reduction, reuse and recycling, the County will operate a waste-to-energy Resource Recovery Facility (RRF) to recover renewable energy and minimize the volume of material that must be landfilled.

(4) Landfilling is the least preferred disposal method for RRF ash, bypass waste, and nonprocessable waste that cannot be recycled or reused. "Bypass" is waste received by the County which is processible at the RRF, but which is not processed at the RRF and instead sent by the County to its out-of-County landfill. In-county landfilling will occur only in the event that economic conditions or changes in the law render out-of-County solid waste disposal infeasible.

b. County solid waste acceptance and disposal facilities are designed based upon projections of solid waste generated in the County. To conserve capacity at the RRF and at other solid waste acceptance and disposal facilities for the residents and businesses of the County, the use of these facilities is restricted to solid waste generated in the County. This restriction does not apply to private processing facilities in the County including Office Paper Systems (OPS). OPS operates a paper recycling facility in the County and processes all mixed paper received at the MRF. OPS also processes mixed paper from commercial sources in and outside of the County. As a result, the County processes incidental amounts of non-recyclable out-of-County residues from OPS and other private facilities. The processing of these residues is not intended to impair the County's policy of reserving capacity at the RRF and other solid waste facilities for solid waste generated in the County.

In order to maximize the reach and effectiveness of the County's recycling program, any contract provision allowing the County to contract with other jurisdictions to receive their mixed paper must only be implemented after all reasonable efforts to maximize the County's mixed paper tonnage have been

exhausted. These efforts include maximizing the recycling programs of all County agencies as well as strengthening the County's commercial mixed paper program. In addition, the Council must approve any contract between the County and any other jurisdiction. This approval process includes an advertised public hearing.

c. The County builds and maintains solid waste acceptance and disposal facilities primarily to accommodate municipal solid waste generated in the County. The County facilities may not necessarily accommodate other types of waste.

#### **5.1.2.2 General Refuse Collection Policy**

The entire County is a collection and disposal district as authorized by Montgomery County Code Sections 48-8 and 48-29. The County must provide solid waste disposal and management services to all single-family residences in the entire district (see Section 3.2.2 of this Plan for details).

#### **5.1.2.3 Facilities Siting and Community Impact**

Montgomery County has identified sites for all major public facilities needed to accommodate projected municipal solid waste generation within the ten-year scope of this Plan (see Figure 3.3). It is the objective of the County to minimize the impact of solid waste management facilities on the environment, on residents, and on any one area of Montgomery County.

Whenever possible, traffic flow patterns of publicly contracted or commercial vehicles engaged in the collection of solid waste and associated transfer to solid waste facilities are adjusted in order to avoid conflicts with school bus schedules and to ensure traffic safety for both school-related traffic and that of other institutions. Rail transfer of MSW from the County Shady Grove Processing Facility and Transfer

Station to the RRF is used to reduce the vehicular traffic impact of these solid waste facilities. Rail is the preferred mode of solid waste transfer whenever economically and operationally feasible.

The County provides environmental control measures to protect air quality and prevent water supply contamination in the vicinity of solid waste facilities.

#### **5.1.2.4 Biosolids Management**

It is the policy of the County to promote the beneficial use of biosolids as defined by the U. S. EPA. The County promotes the recycling of the nutrients and organic material present in biosolids to benefit the growth of crops and improve soils. Processes presently employed such as beneficial land application and composting support the beneficial uses of biosolids. Landfilling and incineration are not the preferred means of biosolids management, as those techniques preclude the beneficial use of the nutrients and organic material in biosolids. As a matter of policy, the County will not incinerate biosolids at the RRF.

#### **5.1.2.5 Hazardous Wastes**

Regulation of the transportation, treatment, storage and disposal of hazardous wastes is the responsibility of the State of Maryland. As a matter of policy, through the County Zoning Ordinance, the County does not permit hazardous waste disposal facilities within the County. The County will provide the means for the environmentally responsible receipt and disposal of household and commercial small quantity generators of hazardous wastes.

### **5.1.3 Administration of the Plan**

#### **5.1.3.1 Implementation**

Under the direction of the County Executive, this Plan is developed and administered by the Director of DEP. Within DEP, DSWS provides staff support to the Director and:

- a. Formulates and recommends to the County Executive the County Solid Waste Management Plan, revisions of the Plan, and such other revisions or amendments to the Plan as may, from time-to-time, be appropriate.
- b. Coordinates public participation in solid waste management planning.
- c. Coordinates and recommends to the County Executive operating budgets and capital improvements to implement this plan.
- d. Monitors technical developments and innovations in solid waste management.
- e. Analyzes, reviews, identifies potential sites for solid waste management facilities and prepares and submits requests for appropriate permits, permit updates, revisions and modifications.
- f. Reviews and comments on State solid waste refuse disposal permit applications, modifications, revisions and amendments for solid waste facilities.
- g. Causes facilities and systems to be designed, constructed and placed in operation as these relate to solid waste management to implement the Plan, including the provision of appropriate investigations and studies, the development of contracts, the selection and supervision of contractors in accordance with appropriate State permits.

#### **5.1.3.2 Coordination**

- a. M-NCPPC provides requested information regarding population, growth forecasts, planning factors and other developmental criteria specified by the County Council or County Executive.
- b. MDE regulates County solid waste management practices and issues permits for the construction and operation of County solid waste management facilities.
- c. WSSC provides requested information regarding engineering, design, present and future capacities and fiscal elements of biosolids management facilities and programs.
- d. Title 26.03.03.02B of COMAR provides that the Plan include all, or part of the subsidiary plans of the towns, municipal corporations, sanitary districts, privately owned facilities and local, State and Federal agencies having existing, planned or programmed development with the County to the extent that these inclusions shall promote public health, safety and welfare.” No subsidiary solid waste management plans have been approved by the County for inclusion in this Plan.

#### **5.1.3.3 Planning**

Solid waste management planning is an ongoing activity conducted by DEP. The plan of action contained in this Chapter reflects the County's assessment of needs to manage solid waste systems during the next ten years. As conditions change, the County Executive and the County Council may alter, extend, or modify this Plan of action accordingly.

#### **5.1.3.4 Public Participation**

DEP coordinates public participation in solid waste management planning and provides administrative support and information to SWAC, DAFIG and other solid waste advisory committees created by the County Council, or by the County Executive.

a. Solid Waste Advisory Committee – SWAC is a legislatively created citizen advisory and oversight committee that consists of 15 members appointed by the County Executive and approved by the County Council. SWAC members serve three-year terms. The committee is advisory to the County Council and the County Executive on all matters relating to solid waste management within the County. Chapter 48, Sections 38-40 of the Montgomery County Code specifies the organization, membership, and activities of the committee.

b. Dickerson Area Facilities Implementation Group – DAFIG is a legislatively created citizen advisory group consisting of 12 voting members appointed by the County Executive and approved by the County Council (see Council Resolution 13-1498 in Appendix E). DAFIG advises the County on issues of concern to the community that is affected by County solid waste operations in the Dickerson area. The facilities under the purview of the DAFIG include the RRF, the Yard Trim Composting Facility, properties originally purchased for the Site 2 Landfill, and properties associated with the original Matthews Farm. It is intended that the DAFIG will function in an advisory capacity to the County for the life of the facilities at Dickerson.

c. Ad Hoc Committees – From time to time, the County Executive appoints ad hoc committees for the purpose of addressing special problems related to solid waste. Such committees serve at the pleasure of the County Executive. These committees are established to represent special community interests as the need arises.



d. Public Hearings – The County Council holds a public hearing on the proposed Comprehensive Solid Waste Management Plan and any revision thereof. At least ten days notice of the hearing is given by publication in a newspaper or newspapers of general circulation in Montgomery County.

e. Public Information Meetings – DEP may conduct public meetings for the purpose of informing the public concerning any aspect of requirements, developments and proposals related to solid waste management and planning.

#### **5.1.3.5 Legal Matters**

a. County Code Amendments – The Director of DEP, in coordination with the OCA, prepares and recommends to the County Executive appropriate amendments to Chapter 48 (Solid Wastes) of the Montgomery County Code and other relevant provisions of the County Code.

b. Executive Regulations – The Director of DEP, in coordination with the OCA, prepares Executive Regulations appropriate to implement County solid waste programs and policies

c. Legislative Cognizance – The Director of DEP maintains cognizance of legislation under consideration by the Legislature of the State of Maryland that is related to solid waste management and provides testimony to legislative committees as may be appropriate.

d. Legal Support – The OCA provides legal advice and assistance in all legal matters related to solid waste management.

e. Regulatory Compliance – DEP and sister agencies work cooperatively to ensure that the County complies with all Federal and State regulatory requirements relating to the management of solid waste facilities (see Section 1.4 of this Plan).

## **5.2 THE SOLID WASTE MANAGEMENT SYSTEM**

This section contains a description and plan of action for each major component of the County's Solid Waste Management System. Each plan of action covers the ten-year period from 2008 through 2019. A summary of each plan of action appears as Table 5.1.

### **5.2.1 County Run Components of the Solid Waste Management System**

The principal components of the County's solid waste management system include: (1) the Shady Grove Processing Facility and Transfer Station; (2) the RRF; (3) the MRF; (4) the Yard Trim Composting Facility; (5) the out-of-County hauling and landfill disposal contract; (6) the Site 2 in-county property purchased for potential future landfill use; (7) the waste transportation system; and, (8) the solid waste reduction, reuse and recycling programs. In addition, the County is responsible for the management of the closed Oaks and Gude Landfills.

#### **5.2.1.1 Shady Grove Processing Facility and Transfer Station**

a. **Facility Description** – Refuse collected by licensed waste haulers is delivered to the Shady Grove Processing Facility and Transfer Station. The Transfer Station is located on a 40-acre site adjacent to the 5-acre MRF site in Derwood. The Transfer Station processed an average of 2,120 tons per operating day in Fiscal Year 2008. Temporary increases in the daily tonnage processed occur following inclement weather, holidays, and weekends, during summer months and during periods when

competing regional waste facilities shut down or limit the amount of Montgomery County waste they will accept. The current operating permit of 821,500 tons per year does not restrict the daily tonnage processed, provided all other conditions of the permit with respect to the proper management of waste are met.

b. **Transfer Function** – From 1982 through 1995, refuse received at the Transfer Station facility was transferred from collection vehicles into trailers for transport and disposal at the County's Oaks Landfill. In 1995, modifications were completed at the Transfer Station as part of the development of the Transportation System to facilitate rail haul of processible waste to the RRF. Three solid waste compactors were installed to compress up to 30-ton loads of solid waste into "logs" that are mechanically discharged into 40-foot containers. A fourth compactor was added in 2006. Containers of compacted waste are driven to the rail yard for shipment via rail to the RRF. From 1995 through 1997, ash was delivered by rail from the RRF and nonprocessible waste was transported by truck to the Oaks Landfill for disposal. Since October 1997, in conjunction with the closing of the Oaks Landfill, nonprocessible waste received at the Transfer Station that can not be recycled has been transported by tractor trailer to a private landfill in Brunswick County, Virginia. Ash residue is transported from the RRF by rail to a rail yard serving the same landfill facility and trucked the final 40 miles to the landfill. An area of the Shady Grove Processing Facility and Transfer Station has been made available for the tipping and reloading of nonprocessible construction and demolition debris, which allows for recycling of some of this solid waste.

**Table 5.1**  
**Solid Waste Management System: Summary Plan of Action**

<b>FACILITY/ PROGRAM</b>	<b>SUMMARY PLAN OF ACTION</b>
<b>Shady Grove Processing Facility and Transfer Station</b>	Assessment of the relocation of yard waste transfer and grinding operations to Gude Landfill subject to future County Council appropriation. Maximize materials sold as mulch to minimize tonnage sent for composting. Set yard waste tip fee per Section 5.4.2.1
<b>Resource Recovery Facility</b>	Periodically explore the feasibility of RRF ash and/or non-ferrous recycling. Set tip fee per Section 5.4.2.1. Aggressively market electricity and ferrous to secure the best prices available. Conduct detailed energy balance analysis to maximize thermal and power efficiency.
<b>Materials Recovery Facility</b>	Continue to aggressively market recovered materials to capture best prices. Encourage increased usage of unused MRF capacity by non-residential generators.
<b>Yard Trim Composting Facility</b>	Continue aggressive promotion of grasscycling and backyard composting. Maintain back-up contracts for composting yard trim in excess of 77,000 tons. Increase market share and diversity of compost products produced by the County. Continue on-going program to periodically replace portions of paved pad and improvements to on-site storm water management.
<b>Out-of-County Landfill</b>	Encourage private sector recycling of construction and demolition materials and other nonprocessable solid waste rather than landfilling.
<b>Land Reserved for Potential Future In-County Landfill</b>	Retain the Site 2 property, located in Dickerson, MD, through the entire life of Plan for use in the event economic conditions, changes in law or other circumstances render out-of-County waste disposal infeasible.
<b>Waste Transportation System</b>	Monitor the performance of all transportation contractors to ensure reliability. Build contingency capacity to ensure waste transport.

<b>Recycling and Waste Reduction Programs</b>	<p>Aggressively encourage backyard composting including giving away compost bins.</p> <p>Periodically evaluate the rates at which each type of recyclable is being captured.</p> <p>Increase capture of all recycled materials through existing programs and outreach.</p> <p>Rigorously enforce the recycling bans instituted by ER15-04AM and 18-04.</p> <p>Vary size and styles of replacement carts to fit housing types and maximize usage.</p> <p>Examine the feasibility of targeting additional materials types for recycling including food waste generated at restaurants, schools and institutions.</p> <p>Continue to evaluate innovative collection techniques to increase recycling.</p> <p>Continue to promote cooperative collection contracting among commercial generators</p>
<b>Private Facilities</b>	<p>Work cooperatively to promote expansion and use of private recycling infrastructure within County, including C&amp;D.</p>
<b>Oaks and Gude Landfills</b>	<p>Operate an oil-grit separator for nonprocessible solid waste collected from County storm water captors at Oaks.</p> <p>Implement gas-to-energy projects at both landfills.</p> <p>Improve gas capture and minimize migration.</p>
<b>System Financing</b>	<p>Maintain transparency in fiscal management.</p> <p>Monitor revenue generation methods to assure fair and equitable rates.</p> <p>Track current market conditions to maintain competitive tip fees.</p> <p>Monitor commodity markets to assure County receives most favorable revenues and credits possible from the sale of all recovered resources.</p>
<b>Greenhouse Gasses and Ozone-Related Emissions</b>	<p>Complete solid waste system-wide inventory of GHG and ozone-related emissions. Include net emissions effects in the consideration of future changes in solid waste management system, including but not limited to any addition of new materials targeted for recycling, and changes to the collection and transportation systems.</p> <p>Work with the private sector (subscription) collectors to quantify and reduce emissions.</p>
<b>Collection</b>	<p>Use creative techniques to encourage contracted haulers to propose environmentally friendly options.</p>

c. **Public Unloading Area** – An area of the Shady Grove Processing Facility and Transfer Station is reserved for unloading refuse and recyclable materials delivered in passenger vehicles. This area receives all of the materials accepted in the County's residential curbside collection program. It also promotes reuse and recycling by accepting materials including computers, televisions, automotive fluids and batteries, scrap metal, rechargeable batteries, building materials, textiles, and tires.

d. **Weighing and Recordation** – All refuse delivered to the Transfer Station in loads over 500 pounds is weighed and weights are recorded. All refuse leaving the Transfer Station is weighed and weights are recorded.

e. **Yard Trim Handling** – The Transfer Station includes areas for receipt, handling (including grinding) and load out of yard trim (grass, leaves, brush, and Christmas trees) collected through the curbside recycling program and self-hauled to the site by residents and commercial businesses. Leaves and grass are ground and transferred to the County Yard Trim Composting Facility. Brush, some leaves and all Christmas trees are ground into mulch that is either sold to commercial mulch vendors or provided free of charge to County residents. The disposal of yard trim mixed with disposable waste facility is banned.

f. **Plan of Action: Transfer Station** – Within the ten-year time frame of this Plan, the County expects that the average annual tonnage of MSW received at the Transfer Station will not exceed its permit capacity of 821,500 tons. During peak days, the Transfer Station receives over 3,000 tons of waste per day. Recent improvements including the addition of two more truck scales and an addition to the tipping floor have improved operating flexibility for these peak days. A “regular” HHW collection site at the Transfer Station has been operating since FY 2005.

However, as noted above, the facility is increasingly being used to support recycling programs and other solid waste processing functions. Capital improvements to the Shady Grove Processing Facility and Transfer Station have been undertaken to enhance both facility safety and customer service. Improvements include the development of an adjoining recycling drop off area to the public unloading facility, which separates refuse and recycling drop-off traffic. These facility improvements were completed in Fiscal Year 2001. Additional capital improvements were constructed at the Transfer Station in 2007 to safely maintain fundamental waste management services, minimize large collection vehicles from conflicting with smaller vehicles, increase the efficiency of the weighing and dumping of incoming vehicles and the compaction and loading of containers for shipment from the site, and improve the throughput of vehicles through the scaling operation. The same capital improvement project, ongoing at this time, includes design of the site improvements needed to relocate yard waste handling operations from the Transfer Station to the closed Gude Landfill. This project, and the planned remediation of and future land use plan for the entire Gude Landfill site, is subject to future County Council appropriation, approval by MDE after applicable environmental and engineering assessments have been performed.

#### **5.2.1.2 Resource Recovery Facility**

a. **Facility Description** – The RRF consists of three 600 tons per day mass-burning, refuse-fired boiler units that produce high pressure, high temperature steam used for electrical power generation. The RRF is located on 34 acres of land adjacent to the Mirant Americas Energy Marketing (MAEM) electric generation station near Dickerson, Maryland. The RRF property is owned by Montgomery County and leased to the NMWDA.

b. **Project Management** -- The County is one of seven members of NMWDA. On behalf of the County, NMWDA financed the cost of designing and constructing the RRF and related transportation improvements necessary for the project. For the duration of the outstanding bonds on the RRF, NMWDA owns the facility. Upon repayment of the bonds, scheduled to be complete in 2016, the County may purchase the facility for one dollar. NMWDA contracted for the design, construction, and operation of the RRF through a Service Agreement with Covanta Montgomery, Inc., a subsidiary of Covanta Energy Corporation. The County, in turn, has entered into a Waste Disposal Agreement with NMWDA for the disposal of non-recycled waste and payment of service fees.

c. **Changes to the Waste Disposal and Service Agreements** – The County must not approve, or allow to take effect, under either the Waste Disposal or Service Agreement, any material change in the capacity or operation, or any material reduction in performance or environmental standards, of the facility or the transportation system unless the Director of DEP has submitted the change to the County Council. The Council must approve or disapprove the proposed change within 30 days or two regular Council work sessions, whichever is longer. If the Council does not act within this time frame, the change will stand approved, unless the Council approves a resolution extending the time allowed for Council action.

d. **Electricity Sales Agreement** – An Electricity Sales Agreement provides that NMWDA delivers and competitively sells to the electrical energy market, all electricity net of in-plant usage by the RRF.

e. **Monitoring Program** – DEP monitors RRF stack emissions during all operating hours by means of a data telemetry link to the Continuous Emissions Monitoring System (CEMS) provided under the facility's Title V air permit. The CEMS measures the opacity of the plume as well as the emission levels of sulphur dioxide and



sulphur dioxide reduction efficiency, nitrogen oxides, hydrogen chloride and hydrogen chloride reduction efficiencies, and carbon monoxide, plus certain operating parameters, including temperatures at specific locations and activated carbon feed rates designed to assure proper continuous operation of the facility's air pollution control (APC) system. In accordance with its air permit, emissions are also periodically monitored for trace emissions metals and organics that cannot be monitored by the CEMS.

In addition, and not required by any rule, DEP periodically monitors levels in the ambient air at ground level, and in non-air environmental media, of certain pollutants which are emitted from the combustion of MSW and are of concern to the public including dioxins and furans trace metals (including arsenic, beryllium, chromium, cadmium, nickel, lead and mercury).

Currently, pursuant to a County capital improvement project, the RRF is undergoing a voluntary APC upgrade designed to substantially reduce emissions of NO<sub>x</sub>, and to eliminate the storage and use on site of anhydrous ammonia (a hazardous chemical).

Covanta Montgomery has attained membership status in the USEPA National Environmental Performance Track (NEPT) Program which ongoing membership requires continuous environmental improvements beyond regulatory standards.

DEP, in cooperation with NMWDA and Covanta Montgomery, will require appropriate changes to the engineering and air pollution control systems of the Facility or its operations through change orders or Service Agreement enforcement if the stack and ambient monitoring data disclose levels of pollutants in air or other media that are attributable to the operation of the Facility and unacceptably affect the environment or public health.

**f. Annual Capacity**

The RRF was sized, and is operated, so as not to compete with waste reduction, reuse and recycling activities.

(1) To ensure a complimentary balance between each of these components of the County municipal solid waste (MSW) processing system, the RRF was sized at a nominal design point of 1,800 tons per day and without expansion capabilities, or 657,000 tons per year based on waste with design heating value BTU/lb. During FY08, a total of 579,660 tons of processible waste was sent to the RRF. This includes 30,119 tons of C&D burned, and 549,541 of MSW.

(2) The County maintains a competitive tip fee to control the amount of processible waste delivered to the facility while progress toward achieving the 50% recycling goal also helps moderate the amount of incoming processible waste. The annual target for processible waste to the facility is in the range of 85 percent to 92 percent of permit capacity (e.g. 558,450 to 604,440 tons per year). This goal is pursued by adjustments in the tip fee as described in Section 5.4.2.1. The County has demonstrated its ability to throttle private sector MSW export, and thus moderate annual deliveries to the County, subject to a lag or response time, to maintain achievement of this policy. Limited bypass of processible waste may be required until the tip fee actions produce desired results. Also, while the RRF is designed, and the annual permit limit is based on, the nominal 1800 TPD throughput capacity noted above, it is physically capable, and it is the County's practice, to process at a higher rate during peak periods of delivery. There is strong seasonality to waste deliveries. Annually, the peak month is typically June. In wintertime, the peak month is typically December. If bypass were to occur, it would most likely be in the peak period month of June. However, during such peak delivery months, the County's first strategy for avoiding bypass would be to run the

RRF at its physical limit (e.g. about 58,000 tons per month, as opposed to 54,000 or 1,800 x 30).

In any event, the Executive must notify the Council within thirty days of the close of any calendar quarter during which processible waste is shipped by the County for disposal at its out-of-County landfill. Along with this notification, the Executive must identify what actions – including tip fee adjustments and expanded recycling efforts -- will be taken or are recommended to reduce demand on the RRF. Such notice is not required with respect to private sector MSW export, as that tonnage is tracked by the County on a semi-annual basis. As part of his annual Recommended Operating Budget, the County Executive must notify the County Council of its anticipated RRF throughput and private sector MSW export tonnages for the upcoming fiscal year, as well as the actual RRF throughput and private sector MSW export tonnages that occurred during the most recently completed fiscal year, and the actual RRF throughput tonnage which occurred during the first half of the current fiscal year.

g. **Contingencies** – In the event of any failure or cessation of operation of the RRF or need to bypass waste, waste materials normally processed by the RRF shall be processed in a permitted alternative facility. The Service Agreement for Long Term Waste Transportation and Disposal provides for receipt of bypass and non-processible waste and of all waste if the RRF is unavailable for any reason. Additionally, if RRF ash ever fails a toxicity test, the ash will be transported to a properly permitted facility (see Section 3.1.8.1 of this Plan). Controlled bypass of processible waste may also accompany changes in tip fees (see tip fee in section 5.4.2.1).

h. **RRF Ash Recycling** – Pilot studies completed by the County in 2001 with American Ash Recycling Corporation indicated that ash recycling is technically feasible. However, responses to a competitive procurement in 2002 were not viable as the County could not identify a financially viable vendor. Again during 2008, the County

solicited interest in ash processing. At this time, there appears to be some technical interest, including in the potential for additional metals recovery, but this is dampened by a recent strong downturn in markets related to global economic conditions. DEP will periodically solicit proposals again in upcoming years and will monitor similar efforts by other jurisdictions.

i. **Plan of Action: Resource Recovery Facility** – DEP will continuously monitor the performance of all contractors related to the operations of the RRF. DEP will aggressively market electricity and recovered ferrous scrap to secure the best price available. DEP will also pursue the potential feasibility and cost effectiveness of recovering non-ferrous metals and/or reuse of RRF ash as road aggregate, construction material and other specialized products. If the Department recommends a new contract to recycle RRF ash, the Executive shall report relevant details to the County Council.

DEP may propose ash recycling in the future, but only if the costs, benefits and risks to recycle ash outweigh those for the disposal of the ash.

The County Council sets solid waste tip fees. DEP analysis shows that the County's tipping fee, in comparison to fees that must be paid by private collectors at alternative disposal sites, influences the extent of solid waste export from the County. Unless the need for an alternative tipping fee is demonstrated by DEP, the tipping fee will be set at a level such that processible waste delivered to the Transfer Station for disposal matches, as nearly as possible, 85 percent to 92 percent of the RRF permitted annual throughput capacity, as described above. DEP will continually pursue feasible efficiencies in RRF operation and environmental performance. DEP will continually strive to increase revenues from the sale of electricity and ferrous materials.

### 5.2.1.3 Materials Recovery Facility

a. **Facility Description** – The MRF is located on a 9-acre parcel of land in Derwood contiguous to the Transfer Station. Recyclable materials collected at the curb from single-family residences are transported to the MRF. The MRF also receives recyclables from the Transfer Station drop-off facility, and minor amounts from other sources.

b. **Project Management** – MES operates the MRF under terms of an intergovernmental agreement with the County.

c. **Mixed Paper Transfer** – During Fiscal Year 1999, the MRF was expanded to accommodate the implementation of the residential mixed paper recycling program. OPS transfers mixed paper received at the MRF to the OPS paper recycling facility in the County.

d. **Commingled Container Processing** – Commingled containers, including glass and plastic bottles, aluminum, ferrous and bi-metal cans and aluminum foil, are sorted and baled or stored in a bunker at the MRF through a combination of mechanical and hand separation. Sorted recyclables are sold to various markets for remanufacture and/or reuse. The MRF has a sorting capability of 100 tons of mixed containers per (8-hour) day. During FY 2002, the tipping floor of the MRF was expanded to allow for increased flexibility in processing of materials. Operations efficiency was further increased at the MRF in FY 2003 when most of the processing equipment was replaced.

e. **Plan of Action: Materials Recovery Facility** – The County has entered into a fifteen-year contract with a private recycling firm, OPS, to transport the County's residential mixed paper for processing at the OPS recycling facility. The County must

not approve, or allow taking effect any material change to the mixed paper recycling contract with OPS, unless the Director of DEP has submitted the change to the County Council. The Council must approve or disapprove the proposed change within 30 days or two regular Council work sessions, whichever is longer. If the Council does not act within this time frame, the change will stand approved, unless the Council approves a resolution extending the time for Council action. DEP will strive to increase material revenues and encourage increased usage by non-residential County generators to fill unused MRF capacity.

The Department will encourage non-residential generators to take advantage of available MRF capacity to recycle aluminum, bi-metal, steel, plastic and glass containers.

#### **5.2.1.4 Yard Trim Composting Facility**

a. **Facility Description** – In 1983, a 118-acre WSSC sewage sludge composting facility on the former "Matthews Farm" near Dickerson, Maryland was converted into a County-managed yard trim composting facility. Leaves and grass are composted at the facility in an open-air windrow operation using mobile turning and shredding equipment. The facility produces compost that is dried and screened for commercial bulk and bagged material markets. Facility operations occur on a 48-acre bituminous pavement pad and are limited to 77,000 tons per year (see item d, below).

b. **Project Management** – MES operates the Yard Trim Composting Facility under an intergovernmental agreement with the County.

c. **Community Agreements** – In 1981, the County and the Sugarloaf Citizens Association entered into a Stipulation Agreement relating to the Yard Trim Composting Facility. The stipulation agreement governed certain substantive and procedural

matters relating to operation of the facility and disposition of portions of the former Matthews Farm. In 1996, the County and the Sugarloaf Citizens Association entered into a supplemental Agreement of Settlement and Compromise. The Agreement of Settlement and Compromise serves as a full and final settlement between the parties with regard to all earlier disputes. The agreement establishes limitations upon the operation of the Compost Facility and contains certain host community benefits and considerations. In August 2000, an amendment to the Agreement of Settlement and Compromise was signed by the County and the Sugarloaf Citizens Association to allow bagging of up to 500,000 bags annually at the facility and to provide for physical improvements to some structures on the Matthews Farm community center. The Stipulation Agreement and the Agreement of Settlement and Compromise, including Amendment 1 are included in Appendix D.

d. **Facility Capacity** – The Agreement of Settlement and Compromise limits the amount of yard trim processed at the facility to 77,000 tons per year. Per the agreement, the County may exceed the 77,000 ton limitation only if the excessive tonnage is attributable solely to a pilot program and the prior written consent of the Sugarloaf Citizens Association is obtained subject to the provisions of the agreement.

During FY 2008, a total of 74,040 tons of leaves and grass were delivered to the County for composting. At the same time the County has: (i) aggressively expanded its promotion of grasscycling and backyard composting, (ii) raised its yard waste tipping fee to dissuade deliveries from outside the County, and (iii) and begun diverting leaves into its mulch production operations. Projecting that figure to increase in proportion with single-family housing growth suggests that the 77,000 TPY limit in that Sugarloaf agreement might not be reached in FY 2015. However, yard waste deliveries are known to be influenced also by other factors including weather.

e. **Plan of Action: Yard Trim Composting Facility** – In addition to promoting additional grasscycling and backyard composting, the County will maintain contingency backup composting contracts, and at the same time work toward developing additional yardwaste processing capacity of its own. For the immediate future DEP will continue to: monitor annual tonnages of yard trim processed at the Composting Facility and sources of that tonnage; aggressively promote grasscycling and back yard composting; and, to assure that there is no delivery exceeding 77,000 TPY to its Yard Trim Composting Facility in Dickerson, MD, will maintain one or more contingency/back-up contracts for composting services at alternate locations.

Contingency contracts may be renewed or replaced from time to time to assure that there is no lapse in contingency coverage. Contingency contract tonnage provided for any fiscal year should provide for no less than a seven percent surge as compared to the most recently completed fiscal year.

DEP will also explore the feasibility of limited yard waste processing in connection with yard waste operations being considered for relocation from the Transfer Station to the site of the old Gude Landfill. This project would be subject to future County Council appropriation, MDE approval and integration into the remediation and future land use plan for the entire Gude Landfill site.

Finally, over the next five years, DEP will either develop long-term contractual capacity, or select a site and apply for permitting of at least 20,000 tons of additional yard waste composting capacity for County use. In this connection, the County will explore the feasibility of including limited types of food waste in such procurement.

An on-going structural maintenance program will continue at the Yard Trim Composting Facility including scheduled replacement of portions of the paved pad and



regular inspections and preventative maintenance to the on-site storm water management system. To assure ongoing ability of the County to recycle its end products at the lowest net cost to the County, DEP will strive to increase the market share of finished compost products produced at the facility including exploring diversity of mulch and compost products and bag sizes.

The production of compost from yard waste is, in and of itself, a recognized environmental benefit relative to disposal, and the facility itself, is high performing relative to all regulatory requirements. However, as with any complex operation, the various environmental aspects of the composting operation itself could be further explored for added environmental benefit. To that end, a formal Environmental Management System (EMS) will be developed over the next three years in which environmental aspects of the operation will be inventoried, opportunities for continuing improvement beyond regulatory requirements identified and ranked, and selected opportunities pursued. Once completed, the County will explore the additional costs and benefits of seeking membership in the USEPA National Environmental Performance Track (NEPT) Program.

#### **5.2.1.5 Out-of-County Landfill Contract**

a. **Contractual Arrangement** – The County entered into a contractual agreement to transport RRF ash, nonprocessable waste, and bypass waste for disposal at a private landfill in Brunswick County, Virginia, until at least the Year 2012. At the County's sole option, the contract may be extended for five additional years under the existing terms, and there are no requirements for negotiations or additional obligations in order for the County to do so. Nonprocessable waste is waste that that is not burnable in the RRF. Nonprocessable waste that is recyclable is transported to various recycling facilities. "Bypass waste", as noted earlier, is waste received by the County which is processible at the RRF, but which is not processed at the RRF. The quantity of

waste bypassed will generally depend on projections concerning the annual amount of waste received and the extent of seasonal and other fluctuations in the daily amount of waste (see Sections 5.2.1.2(f) and 5.4.1.2). Any bypass waste would be shipped to the landfill in Brunswick County by over the road trailers from the Transfer Station. The landfill is owned by BWMF, a wholly owned subsidiary of Allied Waste Industries of North America, Inc. which was recently purchased by Republic Services, Inc. Subject to certain limitations, the contract also requires that BWMF dispose of Montgomery County's waste in an isolated landfill cell dedicated to Montgomery County waste. In the absence of notice from the County, this requirement is subject to a total tonnage limitation equal to 110 percent of the immediately preceding twelve month total tonnage delivered to BWMF. With notice, the County can increase tonnages required to be so disposed by 20 percent over any immediately preceding twelve month period. In the event that the County delivers tonnages exceeding these limitations, BWMF is still required to accept transport and dispose of the County's waste. The contract prohibits the storage, handling or disposal of any waste delivered by the County at any site or facility other than those explicitly approved by the County. The backup plan for the Brunswick landfill includes a contract provision that makes available landfill space at a facility in Georgia or other County-approved alternative facilities owned by the contractor if the Brunswick facility is not available to the County for any reason during the term of the contract.

b. **Facility Description** – The private landfill in Brunswick County, Virginia, is a permitted Subtitle D facility that opened in March 1997 and all other permits needed for this site are current and valid. The County's contract, see above, provides for disposal of County waste (RRF ash, nonprocessable waste and bypass waste) in a dedicated landfill cell reserved exclusively for County waste. An aerial survey conducted on January 16, 2008 indicated that dedicated cell had the potential to develop additional capacity of 6.9 million cubic yards of airspace (or until at least the year 2025 at current

utilization rates assuming 2,500 lb/cy in-place density for ash and 1,000 lb/cy for other waste).

c. **Changes to the Out-of-County Waste Disposal Contract** – The County must not approve, or allow taking effect, any material change to the waste disposal contract with BWMF unless the Director of DEP has submitted the change to the County Council. The Council must approve or disapprove the proposed change within 30 days or two regular Council work sessions, whichever is longer. If the Council does not act within this time frame, the change will stand approved, unless the Council approves a resolution extending the time allowed for Council action.

The waste disposal contract with BWMF contains discretionary rights to mitigate damages to the County under certain circumstances. These include the right to allow waste from other sources to be placed in the County's dedicated cell and the right to allow County solid waste to be placed in a non-dedicated cell. The County Executive must not allow or direct the commingling of out-of-County waste with County solid waste in the County's dedicated cell without first obtaining approval from the County Council. Should the County Executive propose the commingling of solid waste from non-county sources in the County's dedicated cell, the County Council must approve or disapprove the proposed change within two regularly scheduled Council meeting. If the Council does not act within this time frame, the change will stand approved, unless the Council approves a resolution extending the time allowed for Council action.

d. **Plan of Action: Out-of-County Landfill** – The County anticipates exercising its option to extend its contract with BWMF through 2017. Under the contract, County has reserved the option to recycle any portion of the waste stream currently being landfilled. DEP will continue to periodically evaluate the feasibility and cost effectiveness of recycling RRF ash and other solid waste materials transported to the BWMF Inc. landfill for disposal. Presently, selected rubble material and bulky wood waste is

segregated for recycling at the County Transfer Station. DEP will encourage recycling of rubble and other nonprocessable solid waste rather than landfilling. So as to assure availability of a dedicated cell, the County will track, on a rolling twelve month basis, the amount of waste disposed of via its out-of-County Landfill contract. If, at the end of any three-month period, the three-month total exceeds by 10 percent or more the amount for the same period during the previous year, then the County will give such notice.

#### **5.2.1.6 Land Reserved for Potential Future In-County Landfill**

The County's central principal disposal facility for RRF ash, nonprocessable waste and bypass waste is a contracted out-of-County landfill. The out-of-County waste transportation and disposal contract also guarantees the provision of an out-of-County back-up facility in the event the primary facility becomes unavailable. In the event economic conditions, changes in law or other circumstances render out-of-County waste disposal infeasible, the County retains the option to develop a landfill at Site 2 near Dickerson on land owned by the County.

a. **Site Description** – The County has acquired approximately 820 acres along Wasche Road near Dickerson, Maryland to be held in reserve for use in the event economic conditions, changes in law or other circumstances render out-of-County waste disposal infeasible. The location of the land reserved for possible future landfill use is known as "Site 2." Site 2 was selected as a result of a 1990 study that evaluated 16 in-county candidate landfill sites using 26 criteria adopted by the County Council in Resolution 11-787. The landfill site selection criteria are incorporated in this Plan by reference and are included in Appendix C. Should a waste disposal facility be constructed at this site, the footprint of the landfill would consist of approximately 125 acres.

b. **Site Improvements** – The County intends to maintain the current agricultural use of the Site 2 location. With the exception of activity to preserve select historic structures on the former “Chiswell Farm,” restoration of the barn on the former Draper property and maintenance of existing residences as needed to assure economic viability as residential rental units in keeping with the agricultural nature of the neighborhood, and as needed to assure compliance with applicable law and regulation, the County will not make any improvements to the site as long as the out-of-County landfill option remains viable. Pending a final determination on the ultimate need to construct a landfill at Site 2, the property will remain in agricultural use.

c. **Plan of Action: Land Reserved for Potential Future In-County Landfill** – The County intends to retain the Site 2 property through the ten-year planning period and beyond for use in the event economic conditions, changes in law or other circumstances render out-of-County waste disposal infeasible. MDE issued a refuse disposal permit for this site. The County has postponed indefinitely the construction of the landfill. The County may likewise suspend other permit and governmental approval processes at convenient points in the processes to minimize repeating completed work and phases in the event the processes need to be resumed. After a group of citizens filed an appeal regarding the issuance of the permit, the County agreed to join the citizens group to dismiss the appeal until the County decides to proceed with construction of the landfill (see Stipulated Order of Dismissal in Appendix D). The County may commence construction of the landfill at any point in time as it determines that such action to be in the interest of public health, safety and welfare, in accordance with the terms and conditions of this landfill’s Refuse Disposal Permit, and any applicable court orders or consent orders.

#### **5.2.1.7 Solid Waste Transportation System**

The solid waste transportation system primarily consists of moving solid waste from the Transfer Station to the RRF, from the RRF to the out-of-County landfill, and from the Transfer Station to the out-of-County landfill, or to recycling facilities.

a. **Transfer Station to RRF: Processible Waste and Yard Trim** – Processible waste received at the Transfer Station is hauled 18 miles by rail to the RRF. Processible waste is rail hauled in enclosed forty-foot long intermodal containers. Containers are stacked two high on lightweight, special purpose rail cars and travel via an existing railroad right-of-way between a railroad yard adjacent to the existing Transfer Station and a 1.2 mile access track and rail yard adjacent to the RRF. Rail service is provided by CSX Transportation, Inc.

In addition, a portion of the yard trim sent to the Yard Trim Composting Facility is transported from the Transfer Station via rail.

b. **RRF to Out-of-County Landfill: RRF Ash** – BWMF transports ash from the RRF via rail over existing commercial rail lines to a depot in Petersburg, Virginia. From the rail depot, the ash is transferred to trailers for roadway transport to a privately owned landfill in Brunswick County, Virginia.

c. **Transfer Station to Out-of-County Landfill: Other Wastes** – Brunswick Waste Management transports nonprocessible waste, and if necessary bypass waste. Nonprocessible waste is waste that is not suitable for burning. Nonprocessible waste that can be recycled is sent to various regional reclamation facilities. The remaining nonprocessible waste that cannot be recycled is generally loaded into containers at the Transfer Station and shipped via over-the-road trailers to the privately owned landfill in

Brunswick County, Virginia. A small amount of nonprocessable waste is loaded into containers at the RRF and shipped by rail to the landfill. Waste will be bypassed if the daily amount of burnable waste received exceeds the capacity of County facilities or projections predict that future waste receipts will cumulatively exceed the physical or permitted capacity of County facilities. The bypass waste is loaded into containers at the Transfer Station and shipped via over-the-road trailers to the privately owned landfill in Brunswick County, Virginia.

d. **Plan of Action: Waste Transportation System** – DEP will monitor performance of all transportation contractors. DEP will enforce all contractual service standard requirements to ensure reliable and uninterrupted movement of wastes and build contingency capacity to ensure waste transport.

#### **5.2.1.8 Recycling and Waste Reduction Programs**

a. **Recycling** – Recycling Goal -- The County's goal is to achieve, maintain or exceed 50 percent recycling of municipal solid waste (MSW) by the end of Calendar Year 2010. In selecting initiatives to meet this goal, DEP will focus its efforts where the greatest opportunities exist. DEP will conduct cost avoidance studies to establish what further recycling is economically feasible to exceed this goal. The program will continuously identify potential recycling sources, programs and markets, and will provide a system to match recycling sources with recycling programs and recycling markets. For the purpose of this calculation, the recycling rate shall be defined as the total measurable quantity of MSW that is recycled, composted or source reduced as a percent of the total quantity of MSW generated in the County. In performing its calculation, DEP will utilize, to the maximum extent possible, documented data sources. Waste materials that are not typically considered MSW, including land clearing debris, construction and demolition debris, hazardous waste, and special medical waste, and incinerator ash is not to be counted in the County's recycling rate

calculation (see Council Resolution 14-443 in Appendix F). In order to implement this, DSWS has implemented a means of accounting for any C&D that is burned at the RRF.

As demonstrated in Section 3.1.10 of this Plan, current County recycling efforts exceed the MRA goal of 40 percent diversion rate<sup>1</sup>.

b. **Waste Reduction** – The County Executive will evaluate the opportunities for waste reduction and conduct education and outreach programs to explain the need and opportunities for waste reduction. The County Executive will work with regional agencies, notably the Council of Governments and the State of Maryland, and with the Federal Government to promote state, regional, and national waste reduction efforts, including promoting packaging legislation with the goal of reducing the volume and increasing the recyclability of packaging. The County Executive will evaluate and report on the amount of waste reduction or increase that has taken place to date.

c. **Single-Family Residential Recycling** – County Regulation 15-04AM establishes the entire County as a recycling service area. All single-family residences in the County, with the exception of those in certain incorporated municipalities, receive curbside collection of mixed paper, glass containers, aluminum cans and foil products, steel and bi-metal cans, certain plastic containers, grass, brush, leaves, Christmas trees and large household appliances (“white goods”) and select other scrap metals. Chapter 48 of the County Code mandates participation in the curbside recycling program for all residents of buildings comprised of six or fewer dwelling units. The curbside recycling program includes a public outreach campaign to maximize recycling participation and reduce contamination. Specifically, outreach activities include media advertisements, the DEP/DSWS web site, delivery of service notices (on recycled paper) to each

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<sup>1</sup> In 2000, Maryland established a voluntary statewide waste diversion goal of 40%.



resident as new or additional recycling services are introduced, and other promotional activities such as participation in fairs and public appearances.

In the cases of townhouses, multi-family properties with six or fewer dwellings, and properties with unusual configuration, it may be necessary to provide recycling collection by other than current means. Space constraints as well as the absences of driveways and garages in some townhouse communities offer particular challenges to successful recycling. An opportunity may exist to improve recycling participation and set out in townhouse communities through use of alternative bins of sizes and types that are more manageable in a townhouse environment. DEP will evaluate other alternate means and levels of service to promote recycling at such properties.

d. **Yard Trim** – The County Executive conducts a vigorous outreach and education program to encourage residents to leave grass clippings on lawns (“grasscycling”) and to engage in backyard composting of grass and leaves. Yard trim, including leaves, brush, and grass clippings have been banned from being delivered to, or processed at, the RRF or any landfill which is part of the County's waste management system. DEP will continue to give away compost bins to promote backyard composting, and will continue to aggressively promote both backyard composting and grasscycling. DEP will develop additional specific strategies to minimize the growth of yard trim brought to the Yard Trim Composting Facility, will maintain back-up contract composting capacity, and explore the feasibility of developing additional county composting capacity. Finally, the Executive may recommend further adjustments in the yard waste tip fee to control the amount of yard trim delivered to the County system.

e. **Multi-Family Residential Recycling** – The County mandates through Executive Regulation the recycling of mixed paper, commingled containers, yard trim, Christmas trees, and scrap metal items at all apartment and condominium properties

with greater than six dwelling units. All multi-family properties with greater than 6 units must submit to the County an annual waste reduction and recycling report including information on the tonnages of materials collected for recycling and for disposal for that property.

The County assists multi-family residential property owners in complying with recycling and reporting requirements. The County has established technical and peer assistance programs to provide technical expertise to multi-family property owners and managers in beginning, maintaining, or expanding recycling programs, and to residents in encouraging and promoting recycling.

f. **Commercial, Institutional and Government Recycling** -- Executive Regulation 15-04AM mandates recycling of mixed paper or sorted paper, commingled containers, yard trim, Christmas trees, and scrap material items at all County businesses, institutions and government agencies. As detailed in Executive Regulation, businesses with 100 or more employees, as well as certain select other businesses, must prepare a waste reduction and recycling plan demonstrating how the business will recycle or reduce its solid waste. These same businesses also are required to submit to the County an annual waste reduction and recycling report including information on the tonnages of materials collected for recycling and for disposal for that property.

The County assists non-residential property owners in complying with recycling and reporting requirements. The County has established technical and peer assistance programs to provide technical expertise to businesses in beginning, maintaining or expanding recycling programs and to solicit the cooperative support of employers in encouraging and promoting recycling.

The County will involve private industry in a planning partnership to increase the infrastructure needed to collect, transport, sort, and process recyclable business waste.

Issues that this partnership should address include waste auditing of businesses to establish recycling feasibility; the role of public collection contracts and the County recycling center in business recycling; and the possibility of the County acting as the market of last resort for recyclable materials.

The County Executive should identify potential sources of grants, credits or loans to provide funding for recycling programs.

g. **Waste Stream Detoxification** -- Some household and business wastes in MSW may have hazardous characteristics (toxicity, ignitability, corrosivity, or reactivity). Hazardous materials frequently found in homes and businesses include: pesticides, oil-based paints, paint thinners and solvents, batteries, fuels, used motor oil, brake fluid, antifreeze and photographic chemicals. To prevent this material from entering the MSW stream, the County sponsors up to four HHW collection events annually at up to four sites around the County. A "regular" drop-off collection site has been established at the Transfer Station. The County also sponsors the "Ecowise" program featuring monthly collection events at which eligible small quantity hazardous waste generator businesses may dispose of up to 100 kilograms of hazardous materials. All materials received through both the HHW and the Ecowise programs are collected and transported to permitted TSD facilities by County contractors in accordance with all Federal and State regulations governing hazardous waste.

A "regular" HHW drop-off collection site at the Transfer Station was opened in 2004. In order to increase program participation, the County has increased HHW operating hours to 9AM to 5PM, seven days a week. DEP will seek to expand participation in the small quantity hazardous waste generator program for County businesses.

h. **Incorporated Municipalities** – Both the City of Rockville and the Town of Gaithersburg have now adopted the single-family components of the County’s recycling regulation ER15-04AM. The County will encourage each of the remaining incorporated municipalities in the County to establish efforts similar to its recycling program. The County has provided access to the MRF to all County municipalities providing curbside recycling collection services including commingled containers and source separated residential mixed paper. Some County recycling program resources, particularly in support of multi-family and non-residential recycling, have been made available to the municipalities.

i. **Purchase of Goods Containing Recycled Materials** – Section 11B-56 of the Montgomery County Code establishes that recycled paper and paper products should constitute at least 50 percent of the total dollar value of paper and paper products purchased by or for the County government. The same section of the County Code also mandates that County agencies either require the use of goods containing recycled materials or use of a percentage price preference (up to 10 percent) for recycled materials when purchasing goods. The Office of Procurement reviews all purchasing agreements to ensure compliance with the requirements of the County Code. DEP distributes information on the availability of products containing recycled materials to County businesses and municipalities to encourage them to use these materials.

j. **Plan of Action: Recycling and Waste Reduction Programs** – As of the end of Fiscal Year 2008, the residents and businesses of Montgomery County had achieved a recycling rate of approximately 44.3 percent.

To reach its 50 percent recycling goal, the County maintains an ongoing recycling planning and implementation process. Formally punctuating that process, the County annually publishes its “Recycling Plan Update”. That Plan reports on specific program achievements, lays out how the 50% goal is being pursued under approved

programs, and identifies potential additional initiatives that can be introduced in a subsequent budget year, if needed. DEP, on an annual basis, will update this document as the program is revised or amended introducing additional programs and initiatives if needed. Copies of that document are available from DEP. Highlights of the strategies that DEP will pursue to improve recycling performance over the next three years include the following:

(1) Continue providing education, outreach, training, technical assistance, and guidance across all sectors to single-family and multi-family residents, multi-family property owners, managers, condominium and common ownership community boards, and businesses including business owners, managers, commercial property owners, property management companies, employees, commercial service providers, and refuse and recycling collection companies to further increase participation in recycling, waste reduction and buying recycled programs.

(2) Continue to provide a comprehensive level of outreach, education, training, technical assistance and site-specific recommendations to businesses and multi-family properties to implement, improve or expand on-site recycling programs through the use of on-site visits by staff.

(3) Continue dedicated enforcement of the County's recycling regulation, Executive Regulation (ER) 15-04AM as it pertains to businesses and multi-family properties by thoroughly investigating cases of non-compliance.

(4) Continue dedicated enforcement of the County's companion recycling regulation, Executive Regulation (ER) 18-04 pertaining to haulers and collectors of solid waste, which regulation, together with ER 15-04AM, implements the County's ban on disposal of targeted recyclables.

(5) Expand efforts to further implement cooperative recycling and refuse collection programs among businesses in the Central Business Districts. Data has

shown that when businesses that generate similar types of waste contract their recycling and refuse collection services together with one collection service provider and share a common set of recycling and refuse collection containers, the businesses increased the amount of materials they recycle and the majority of participating businesses have seen a decrease in their monthly recycling and refuse collection service costs due to collection efficiencies.

**Target Additional Materials for Reuse:** As opportunities arise, the County will target additional types of materials for reuse programs. The County will refine waste generation and waste reduction measurement techniques, document results of waste reduction activities, and develop cost/benefit assessments for new waste reduction initiatives. The County will continue to work cooperatively with regional organizations to promote waste reduction, including support of legislative initiatives pertaining to waste reduction.

**Target Additional Materials for Recycling:** The Department will continue to explore any practical opportunity to expand the range of material types that can be recycled, whether by curbside collection, drop-off or special events. In particular, DEP will monitor potential technological advances in food waste composting to determine if this activity may one day be suitable for implementation in the County. This can include programs that target specific types of food waste generators (e.g. institutions, grocery stores, and restaurants). Tonnage magnitude need not be the only measure of focus in seeking new venues for recycling. The Department may look for opportunities to develop new cost effective programs for materials that are currently recyclable but are relatively small components of the waste stream.

In July, 2008, the County expanded the types of plastics included in its recycling programs. Almost all types of plastics other than clamshells, toys, and film plastics are now included. Markets for film plastics continue to require purities beyond the practicable

capability of the County's curbside collection program. However, film markets have demonstrated tolerance for the grocery store type bags returned to some of those stores. Virtually all grocery stores in the County take bags for recycling. The County will continue to work with retailers to promote film plastic recycling via this route.

**New Education Methods:** The Department will appraise the effectiveness of alternative education and outreach strategies and will focus its efforts on initiatives quantifiably demonstrated to have measurable positive effect on recycling performance. The Executive's annual operating budget submission must include summary findings of participation studies, focus groups, surveys and other research used to evaluate the effectiveness of alternative techniques and must describe how these findings justify the specific outreach, education, and technical assistance proposed for funding in the upcoming fiscal year.

#### **5.2.1.9 Electronic Recycling**

DSWS' electronics recycling program is consistent with the provisions of the Statewide Electronics Recycling Program Act ("Act"), which took effect on October 1, 2007. The program provides for the recycling of computers, which includes desktop personal computers, laptop computers and computer monitors, and is consistent with the Act. Additionally, and again consistent with Act, the program also provides for the recycling of covered electronic devices, which means a computer or video display device with a screen that is greater than 4 inches measured diagonally. Other electronics items are acceptable for recycling under the program.

In addition to the HHW and Ecowise programs as described in previous section, the County has a drop-off program for computers (CPUs), monitors and related electronic items at the Transfer Station, and it recently expanded this program to include TV sets, computer monitors, cell phones, and virtually any electronic device with a cord.

Material is accepted from County residents and businesses. Some computer components in working order are salvaged for reuse; hazardous and toxic materials in unusable components are recovered for proper disposal.

DEP has also just recently begun to routinely conduct several electronic collection events per year at various, more convenient, locations around the County. For CFLs the County will continue to work to expand the number and locations of retailers who accept CFLs for recycling.

**Plan of Action:** In the future, DED will continue to explore the most effective means of attracting electronics for recycling. DEP will also continue to monitor the needs and opportunities including the need for more electronics recycling and evaluate whether there is a need to continue satellite electronics recycling events at their current frequency.

#### **5.2.1.10 Closed Landfills**

a. Gude Landfill – The closed Gude Landfill is located on an approximately 120-acre tract in the central part of the County just north of Rockville. It also checks for the presence of landfill gas in gas monitoring wells along the perimeter of the site. Closed since 1982, the County currently monitors the ground water quality at the site. The County has retained a contractor to maintain an active methane gas collection system at the Gude Landfill. Methane extracted from the closed Landfill will be used to generate electricity at a small on-site power plant. A power plant was at the site from 1985 to 2006. A new facility was completed in mid-2009.

b. Oaks Landfill – The Oaks Landfill is located on a 545 acre tract near Laytonsville, Maryland. From 1982 through 1995, the County transported all of its MSW collected at its facilities to the Oaks Landfill. From 1995 through 1997, the County



transported RRF ash and nonprocessable waste to the 180-acre Landfill. The County closed the Oaks Landfill in October 1997 concurrent with the commencement of the contract to dispose of RRF ash, bypass and nonprocessable waste at a private landfill in Brunswick County, Virginia. Capping of the Oaks Landfill was completed in 2001. The Oaks Landfill has a leachate pretreatment facility and a gas management facility that will continue to be operated throughout the 30-year post-closure maintenance period. A landfill gas-to-energy facility started operation in mid-2009.

Leachate is collected from the Landfill and stored in lined lagoons. The leachate is then pumped to an on-site pre-treatment plant, and treated before being transported by truck for discharge into the permitted sanitary sewerage system. Landfill gas blower/flare systems and leachate management systems are checked daily by the site leachate pretreatment plant contractor and other contracted security and operations personnel. Routine site inspections are performed to check for litter, illegal dumping along the site perimeter, erosion, fence damage, and other general maintenance issues.

The County regularly samples ground water monitoring wells at the Oaks Landfill site. In 1992, low levels of volatile organic compound contamination were detected from seven of the 22 monitoring wells and four nearby residential drinking water wells. To mitigate concern regarding water safety, the County initially provided point-of-entry activated carbon water treatment systems to residences with well contamination. The County also provided bottled water to all other potentially affected households. Since then, the County, in conjunction with WSSC, constructed a potable water distribution system to all potentially affected households around the perimeter of the landfill from the WSSC water supply system in the area.

c. **Plan of Action: Closed Landfills** -- DEP performs all actions necessary for post-closure care of the Oaks and Gude Landfills. Post-closure care and maintenance is performed by contractors on an on-going basis in accordance with State and Federal

requirements<sup>2</sup>. Ground water quality monitoring will continue under the currently approved monitoring plan until such time as reductions in frequency and range are mutually agreed to by the County and MDE.

Methane and leachate extraction practices will continue at the County's closed landfills. The County constructed a landfill gas recovery and flaring facility at the Oaks. Both landfills have active flare systems for gas control. Gas-to-energy facilities for each site are scheduled for completion in 2009.

Based on recommendations from the community concerning the long-term use of the landfill property, the County, in conjunction with M-NCPPC, developed hiker, biker and equestrian trails in the 350-acre buffer area around the Oaks Landfill. The capped landfill will be maintained as an open space meadow wildlife habitat.

#### **5.2.1.11 Beauty Spots: Satellite Drop-off Centers**

a. **Operations** – The County operates two satellite drop-offs facilities (also referred to as convenience centers or “Beauty Spots”) for the purpose of citizen disposal of bulky residential solid waste. These convenience centers are located in Poolesville, at 19200 Jerusalem Road, and in Damascus, at 26149 Ridge Road. Operating hours for citizens' waste disposal are limited to weekends, from 9:00 a.m. to 5:00 p.m. on Saturdays, and from 9:00 a.m. to 1:00 p.m. on Sundays. Typical materials received at the centers are large, bulky items such as home remodeling debris, and furniture.

b. **Plan of Action** – The County only accepts non-recyclable bulky waste from County residents at the Poolesville and Damascus satellite drop-offs facilities. The Department will enforce this policy to restrict disposal of waste from non-residential and

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<sup>2</sup> Landfill closure and post-closure requirements as described in the Code of Federal Regulations 40 CFR, Part 258.

out-of-County generators. The Department will periodically re-evaluate the manner of providing this service, including facility operating hours, to best accommodate community needs.

#### **5.2.1.12 Waste Collection**

a. **Operations** – The County plays a large role in the collection of waste, as described in Section 3.2, contracting for with the private sector for curbside collection of disposable refuse and separate collection of recyclables and licensing private sector collection.

b. **Plan of Action** -- The County will continue to play its current role in waste collection services as described in Section 3.2. However, with increased interest in greenhouse gas (GHG) and ozone-related emissions, the County should use creative techniques to encourage contracted haulers to propose environmentally friendly options.

#### **5.2.1.13 Greenhouse Gas and Ozone- Related Emissions**

a. **Operations** – As described in Section 4.6, the County is taking a leadership interest in the management of greenhouse gas (GHG) and ozone-related emissions, and recognizes that all aspect of its solid waste management system can play a part.

b. **Plan of Action** – The County will develop a complete, solid waste system-wide, inventory of GHG and ozone-related emissions, and will include net emissions effects in the consideration of future changes in solid waste management system.

### **5.2.2 Biosolids from Water Supply and Wastewater Plants**

A fuller description of the County's wastewater and biosolids management plan is detailed in the *Comprehensive Water and Sewer Plan for Montgomery County*.

a. **Description of Facilities** – There are four wastewater treatment plants (WWTP) and one Water Filtration Plant (WFP) that generate biosolids in Montgomery County.

The WWTP are the Damascus, Hyattstown, Poolesville and the Seneca. The biosolids generated at these plants are beneficially land applied to agricultural cropland in the region by private contractors. Combined, the four wastewater treatment plants generate approximately 6,000 dry tons of biosolids per year.

The Potomac WFP is located on River Road two miles upstream from Great Falls, serves both Montgomery and Prince George's Counties. The plant draws water from the Potomac River. Solids removed from the intake water are hauled from the plant. For 2005 to 2007, about 14,000 wet tons per year were hauled, at about 28% total solids. The solids were hauled by a contractor and used in blended topsoil and mulch products.

b. **Plan of Action: Seneca Wastewater Treatment Plant** – The Seneca Wastewater Treatment Plant has been expanded from a 5 mgd facility to a 20 mgd facility. Seneca plant expansion from 20 mgd to 26 mgd is currently under design. Expansion of the facility has resulted in an increase in the amount of dry tons of sludge produced. A comparison of 2002 and 2008 with the new plant and dewatering facility in operation is listed:

Year	Final Effluent Flow (avg mgd)	Wet Tons Hauled	Percent Solids	Dry Tons Hauled
2002	6.3	11,124	11.9%	1,324
2008	15.2	23,945	26.4%	6,206

Even though the dewatering efficiency did increase significantly, the large flow increase (plus lime addition) resulted in an overall increase in wet tons hauled.

### **5.2.3 Private Facilities**

#### **5.2.3.1 Private Municipal Solid Waste Facilities**

a. **Permit Requirements** – Private persons who wish to operate solid waste disposal facilities in Montgomery County may not do so without a State solid waste disposal permit. The State will not issue a permit unless the site is consistent with the Comprehensive Solid Waste Management Plan. With respect to private sites:

(1) The County will review and comment on State solid waste disposal permit applications; the site and any facility on the site must comply with all County laws and with relevant parts of this Plan.

(2) The County, as part of its review of permit applications, will designate materials that private facilities are permitted to process. These designations will be made at the time of application according to public solid waste flow control needs and may change from application to application.

(3) At the time that a property owner applies for a State solid waste refuse disposal permit, the County will review the permit application in accordance with Section 9-210 of the Environment Article of the Annotated Code of Maryland to determine conformity of the proposed private facility with County land use, zoning and solid waste laws, regulations and plans.

b. **Zoning Requirements** -- The County Zoning Ordinance limits privately owned transfer stations, landfills and incinerators to the I-2 heavy industrial zone. Moreover, these facilities are permitted in the I-2 zone only if the County Board of Appeals grants a special exception determining that the specific I-2 parcel is suitable for a transfer station, landfill or incinerator in accordance with the standards set forth in the Zoning Ordinance. The Zoning Ordinance allows a construction recycling facility in a Rural Service Zone provided that the facility meets special development standards set forth in Section 59-C-9.83 of the County Zoning Ordinance. These requirements set minimum standards for lot size, road frontage, distance to an interstate interchange, building set back, and on-site screening and landscaping. The facility also requires a construction debris recycling permit that satisfies the materials handling and reporting requirements of Section 59-C-9.84 of the County Zoning Ordinance. The Zoning Ordinance allows private recycling facilities in select industrial zones.

#### **5.2.3.2 Other Private Waste Facilities**

Private facilities handle 42 percent of the rubble, land clearing and C&D generated in the County. One privately-owned facility located in Clarksburg has sufficient permit capacity to handle all of the C&D generated within the County. In addition, as detailed in Chapter 4, there are many other options located outside the County where collectors chose to take C&D. Other privately-owned facilities, almost exclusively located outside of Montgomery County accept land clearing, hazardous wastes, medical wastes, dead animals, automobiles and tires.

#### **5.2.3.3 Plan of Action: Private Facilities**

The lack of nearby acceptance facilities for yard trim, food and other special recyclable wastes limits the feasibility of additional private sector recycling. DEP will

explore interest and roadblocks to the private sector development of nearby recycling facilities for such special wastes as yardwaste and foodwaste. The permitted private C&D facility in Clarksburg, is accepting far less than its permit allows and recycling less than 40 percent of the material it does accept. DEP will explore means of promoting private sector recycling of this type of waste as well. While limited opportunity exists to site new special waste facilities in the County, DEP will continue to review, and possibly modify, existing regulations to promote the expansion of private recycling infrastructure within the County.

## **5.2.4 Data Management and Reporting**

### **5.2.4.1 Solid Waste Data Management**

The County gathers solid waste data from a variety of sources that are used to determine disposal rates, recycling rates, waste reduction activity, and other key measures. Certain solid waste data are readily attainable from in-county sources. Tonnages from County facilities are available for input into a data management system. For example, the tonnages of MSW processed at the Transfer Station and the tonnages of recyclables handled at the MRF are recorded on-site.

Other data points must be determined by less direct means. County regulations require all licensed private haulers and collectors to report, semiannually, on the amount and disposition of waste collected (i.e. tonnage, by type, and where they took it, including non-county facilities). Reporting required under ER15-04AM complements this data and is used to reconcile sector-relative recycling and disposal tonnages. Specialized studies are used to monitor some minor waste streams not reported by the foregoing means. Periodically (e.g. every four years) the County conducts an analysis of the composition of the disposed waste stream ("Tip and Sort") involving statistical sampling of the waste delivered for disposal at the Transfer Station. In addition to providing thorough support for tracking its progress toward achieving its recycling goal and guiding future efforts on that

front (such as enabling the analysis reflected in Table 4-1), these studies also ensure that system benefit charges are properly allocated (see Section 5.4.2.2).

#### **5.2.4.2 Monthly Reports**

DEP prepares monthly reports that summarize current County solid waste activities. These reports include monthly tonnage throughout for major County solid waste facilities, a summary of citizen advisory group and volunteer activities as well as updates on each program of the County's solid waste management system. Monthly reports are distributed to the County Council and to interested citizens.

#### **5.2.4.3 Department Reports to the County Council**

DEP will report annually to the County Council regarding the status of the County's solid waste management system. Annual reporting will include:

- a. The annual average actual unit costs (\$/ton) for major tonnage-related County solid waste programs and activities evaluated on a full-cost accounting basis;
- b. An estimate of the current overall County recycling rate calculated on a fiscal year basis, which report shall appear on the DEP website;
- c. An estimate of the marginal costs of increased recycling;
- d. A Progress reports on implementation of recycling programs including description of major initiatives planned for the upcoming year necessary to implement the policies included in this plan, which report may be included in the annual update of the Recycling Plan Update referred to in section 5.2.1.8(j), above; and



- e. An estimate of the greenhouse gas and ozone-affecting emissions generated by the solid waste management system, and an identification of opportunities for their reductions achievable by changes in component activities of the solid waste management system including increased recycling, and changes to the collection and transportation systems. (The first of this new reporting requirement (e) is to be provided within one year of adoption of this plan.)

In addition to annual reports, DEP will brief the County Council quarterly or at other frequencies as necessary to inform the County Council regarding the implementation of this Plan and the operation of the County's solid waste management system.

#### **5.2.4.4 Plan of Action: Data Management and Reporting**

DEP will continue to maintain its detailed solid waste databases including data pertaining to disposal tons at County facilities and elsewhere, recycling tons at County facilities and elsewhere, per capita and per employee waste generation rates, recycling and composting rates, source reduction trends, waste stream composition and per ton waste processing costs. In addition, the County will seek to improve data gathering from external sources, particularly related to refuse and recyclables processed at non-county facilities.

In cooperation with SWAC, DAFIG and other interested parties, DEP will continue to develop and implement a series of annual performance measurements which will track the efficiency and effectiveness of County solid waste programs and services in the form of both internal benchmarking (measuring continuous improvement over time) and external benchmarking (comparing with other high-performing jurisdictions) for selected programs.

## **5.3 ADEQUACY OF EXISTING SYSTEM TO HANDLE WASTE STREAMS**

### **5.3.1 Municipal Solid Waste; Residential, Commercial, Industrial, and Institutional MSW**

The MSW stream consists of domestic wastes generated by the residential, commercial, industrial, and institutional sectors. County solid waste facilities, including the Shady Grove Processing Facility and Transfer Station, the RRF, the MRF, the Yard Trim Composting Facility, the out-of-County landfill, are available to handle the MSW generated by these sectors.

#### **5.3.1.1 Residential Municipal Solid Waste**

As indicated in Table 3.1, MSW generated from the residential sector in Fiscal Year 2008 was 604,113 tons. Of this total, 453,913 tons were processed at County and other facilities for disposal and 286,241 tons were recycled or composted. Table 3.1 (a) - (d) also projects residential waste generation for the 10-year time horizon of this Plan using the per capita rate applied to population projections. Accordingly, changes in residential waste generation are directly proportional to changes in population. The Year 2019 generation for this sector is projected to be 650,199 tons. Of this total, 335,167 tons are projected for disposal and 315,032 tons are projected for recycling or composting.

#### **5.3.1.2 Commercial Municipal Solid Waste**

As indicated in Table 3.1, MSW generated from the commercial sector in Fiscal Year 2008 was 408,773 tons. Of this total, 180,497 tons were processed by County and other facilities for disposal and 163,376 tons were recycled. Table 3.1 also projects commercial waste generation for the 10-year time horizon of this Plan using a fixed per

employee waste generation rate multiplied by projected County employment levels. Accordingly, changes in commercial waste generation are directly proportional to changes in employment. The Year 2019 generation for the commercial sector is projected to be 469,639 tons. Of this total, 238,594 tons are projected for disposal and 231,046 tons are projected for recycling.

#### **5.3.1.3 Industrial Municipal Solid Waste**

As indicated in Table 3.1, MSW generated from the industrial sector in Fiscal Year 2008 was 221,183 tons. Of this total, 101,789 tons were processed at County and other facilities for disposal and 88,410 tons were recycled. Table 3.1 also projects industrial waste generation for the 10-year time horizon of this Plan using a fixed per employee waste generation rate multiplied by projected County employment levels. Accordingly, changes in industrial solid waste generation are directly proportional to changes in employment. The Year 2019 generation for the industrial sector is projected to be 254,142 tons. Of this total, 129,113 tons are projected for disposal and 125,029 tons are projected for recycling.

#### **5.3.1.4 Institutional Municipal Solid Waste**

As indicated in Table 3.1, MSW generated by the institutional sector in Fiscal Year 2008 was 38,714 tons. Of this total, 17,816 tons were processed at County and other facilities for disposal and 15,474 tons were recycled. Table 3.1 also projects institutional waste generation for the 10-year time horizon of this Plan using a fixed per employee waste generation rate multiplied by projected County employment levels. Accordingly, changes in institutional waste generation are directly proportional to changes in employment. The Year 2019 generation for the institutional sector is projected to be 44,482 tons. Of this total, 22,599 tons are projected for disposal and 21,884 tons are projected for recycling.

### **5.3.1.5 Adequacy of System and Facilities**

In FY 2019, the combined total MSW generation from all sectors is projected to be 1,418,462 tons. Of these, and 692,990 tons are projected to be recycled leaving 725,473 tons for disposal.

a. **Recycling System and Facilities** -- Recyclables collected by means of the County's single-family residential curbside collection program are processed at the County MRF, the Yard Trim Composting Facility. Private sector recyclables, for the most part, including those from the multi-family sector and non-residential sectors (including commercial, industrial and institutional generators), are processed at private facilities.

(1) **Commingled Containers Facility** -- The County MRF can process the materials at a rate of approximately 100 tons of incoming material per 7.5 working-hour shift (13.4 tons per operating hour). The MRF receives commingled materials primarily from the single-family sector, including municipal accounts, but is also available to, and receives a small amount of materials from, the multi-family and non-residential sectors. During FY 2008, total of 21,980 tons of container materials were shipped to market from the County MRF, and for the FY 2019, a total of 24,609 tons officially projected to be shipped. This projection does not include another 3,000 tons of plastics hoped to be recycled as a result of the addition of more types of plastics, a program expansion initiated in July 2008. Allowing for this potential, and for slightly higher residue rates (incoming materials not marketable), a weekly second shift may be needed. During the most recent twelve months, a second shift was found to be needed on occasion. The MRF could be operated on the basis of two full shifts per day on a routine basis if necessary. On this basis, the County MRF is believed to have sufficient capacity to

process all anticipated incoming tonnage of commingled glass, plastic, aluminum and ferrous containers throughout the planning period.

(2) Residential Mixed Paper -- The County has a contractual agreement with OPS, Inc. to process residential mixed paper (RMP) received at the MRF. A portion of the County MRF serves as an Acceptance Facility for this contract, and provides for receiving and transferring Residential Mixed Paper (RMP) to the OPS facility. For this purpose, the County's MRF has the capacity to receive and transfer at least 346 tons of RMP per shift (90,300 tons/year on a five shift per week basis). The County's contract with OPS is designed to accommodate 90,000 tons of RMP but is virtually uncapped should added RMP be received. For FY 2019, the County projects recycling 77,423 tons of residential mixed paper through the MRF, or about 298 tons per day. Thus, the County's MRF and RMP contract provide adequate RMP recycling capacity for the planning period.

(3) Yard Trim – Under the terms of agreements between the County and the Sugarloaf Citizens Association (see Section 5.2.1.4 (d) of this Chapter), the Yard Trim Composting Facility may process no more than 77,000 tons of yard trim per year. Also as discussed in Section 5.2.1.4, during the most recent fiscal year, demand on the Yard Trim Composting Facility was 74,040 tons. Projecting that figure to increase in proportion with single-family housing growth suggests that the 77,000 TPY limit in that Sugarloaf agreement will not be reached in FY 2015. However, yard waste deliveries are known to be influenced by weather. Therefore, in addition to promoting additional diversion to grasscycling and backyard composting, the County will maintain contingency backup composting contracts, and carry out the action plan described in Section 5.2.1.4(e).

(4) Private Sector Recycling Facilities – Recyclables from the multi-family residential sector, as well as those from commercial, industrial and institutional

generators, tend to be processed at private facilities. Paper generated in the multi-family sector is considered residential and is welcomed at the County MRF, as are commingled containers from any sector. The OPS facility, centrally located in the County, is more than adequate to handle paper generated by the non-residential sector. In addition, several large recycling facilities operated in the region counties which adequately serve in-county multi-family residential, commercial, industrial and institutional generators. These private facilities, in conjunction with the County MRF, are expected to continue to meet the needs of the multi-family residential, commercial, industrial and institutional sectors for at least the next decade.

**b. Refuse Disposal System and Facilities** – Non-recycled MSW that is generated in the County is processed for disposal either at County facilities or at private facilities. As indicated in Chapter 3, of the 695,875 tons of MSW disposed of during FY08, 168,618 tons were disposed of at non-county facilities, and in FY 2019, it is projected that 725,473 tons will require disposal. In the unlikely event that none of those 725,473 tons of MSW projected for disposal in the Year 2019 were processed at non-county facilities, then the County's RRF could process up to an average of 1,800 tons per day, taking in a permitted 657,000 tons. Recovering 17,628 of ferrous metals for recycling, this would result in a net of 639,372 tons of MSW being disposal via the RRF, leaving a total of about 91,280 tons of MSW (about 250 tons per day) needing to be landfilled without benefit of resource recovery. This capability is within the capability of the Transfer Station physical and permitted capacity and the capacity of the County's contract with BWMF for transport and disposal at the out-of-County landfill. As the latter expires in 2017, there will be a need to secure additional landfill contract capacity near the end of the planning horizon. The County has already provided adequate MSW disposal system capacity through the 2017. In order to assure system capacity for the entire planning period, the County will begin, no later than FY2014 a procurement process to extend or secure additional out-of-County landfill capacity.

In line with policies articulated in Sections 5.2.1.2(f)(2) and 5.4.1.2, designed to avoid the circumstance of bypass waste, the County prefers not to receive amounts of processible waste in excess of 92 percent of RRF permit capacity, designed to avoid the circumstance of bypass waste. As a practical matter, the actual amount of MSW needing to be bypassed would be influenced by the seasonal variations in the amount of waste received and the schedule of preventative maintenance required by County facilities. In order to avoid sending any processible waste out of County (from the County Transfer Station) in FY 2019 (i.e. to avoid any bypass waste at the County's hands), the County tip fee policy at that time would need to result in private sector MSW exportation of about 121,033 tons. This is substantially less than the amount of export already demonstrated to be absorbed by regional disposal facility options inventoried in Chapter 4 (e.g. private sector MSW export is projected to be reduced from 23 percent of disposal to 18 percent of total disposal). Increased compliance in recycling regulations by the private sector could further reduce projected export.

In summary, the County, itself, has already provided adequate MSW disposal system capacity through 2017 and reasonably expects to procure additional landfill contract capacity needed for the last two years of the planning period. As a practical matter, however, the County recognizes and participates in a regional competitive market for MSW disposal capacity, expects private sector MSW export to continue, and will moderate its tipping fee accordingly, consistent with the policy expressed in Section 5.4.2.1.

### **5.3.2 Land Clearing and Construction and Demolition Debris**

Land clearing and construction and demolition debris, referred to collectively here as "C&D", is solid waste from construction, demolition and renovation projects that produce debris including wood, wood products such as fiberboard and particleboard, cardboard, sheetrock and other drywall, plaster, fiberglass, plastic and other polymers,

composite materials, glass, stone, steel and other metals, rubber, geotextile, asphalt, concrete, brick and mortar, rock, dirt, rubble, tree stumps, logs and large tree limbs. (See definition in Appendix A for a list of exclusions.)

Traditionally, the private sector provided almost all of its C&D disposal capacity needs, and the County provided for only its own government (e.g. road operations) generated disposal. During the period 2001 to 2004, several regional C&D disposal options closed. Because these were more supplanted, capacity-wise, by a large private-sector C&D recycling facility located in Clarksburg, Maryland, C&D deliveries to the County have reduced to the point that the County Transfer Station is now the less preferred disposal site, accepting in FY08 46 percent of all C&D generated in the County.

As indicated in Table 3.1(e), land clearing and demolition debris (C&D) generated in the County was found to be 239,260 tons in Fiscal Year 2008. Of this amount, 128,660 were delivered to various private sector C&D acceptance facilities in the region, and 110,600 tons were delivered to the County's Transfer Station. Of the latter amount, 49,862 tons was generated by County government activities, including 5,057 tons that were sufficiently homogeneous that the County was able to recycle them. (As C&D is not MSW, recycled C&D is not counted in the County's MSW recycling rate.) The County owns no C&D processing equipment. Burnable components of C&D delivered to the County are processible (e.g. burned for renewable energy recovery) at the RRF, but only to the extent that RRF capacity is available. The County sets a separate tipping fee to accept C&D (see Section 5.4.2.1).

Changes in the annual generation of C&D land clearing and demolition debris are thought to be influenced by weather and economic cycles, but otherwise related in a proportional way to population growth and the resulting need for land clearing and new construction. This included about 50,000 tons generated by County government



activities (e.g. road maintenance). A relative dearth of undeveloped land may result in a shift in the C&D composition of privately-generated C&D from land clearing type materials (e.g. stumps and dirt) to building demolition type materials. A total of 267,874 tons of land clearing and construction and demolition debris are projected to be generated in FY 2019.

The Clarksburg C&D recycling facility, alone, has sufficient permitted capacity to handle all non-governmentally generated C&D projected to be generated in the County in FY 2019. In addition several regional C&D processing and/or disposal facilities are expected to remain available for the planning period. However, continued preference by the private sector to use of the County's Transfer Station for disposal of C&D will exacerbate the County's ability to deal with the scenario described in the previous section regarding any sudden reversal in MSW export.

### **5.3.3 Asbestos Containing Materials**

The County no longer manages regulated asbestos-containing material (RACM) and does not use the landfill in Brunswick County, Virginia, for its disposal. Haulers must be licensed by the State to transport RACM and must use disposal facilities permitted by the State to accept RACM.

### **5.3.4 Controlled Hazardous Substances**

The term, "controlled hazardous substances (CHS)," refers to hazardous waste and special medical waste that is generated in sufficient quantities (as established by the State of Maryland) to require special handling and disposal practices to protect public health and the environment.

#### **5.3.4.1 Hazardous Waste**

Hazardous wastes include specific wastes that are listed in Federal and State regulations, or which are characterized by at least one of the following properties: ignitability, corrosivity, reactivity or toxicity. As indicated in Table 3.4, hazardous waste generated in Montgomery County was 14,307 tons for Fiscal Year 2008.

MDE issues permits for hazardous TSD facilities. Permitted TSD facilities located in Montgomery County include the National Institutes of Health and the National Naval Medical Command in Bethesda. Hazardous waste is managed at the National Institutes of Health by private contractors and at the National Naval Medical Command by the Defense Reutilization and Marketing Office System. Hazardous waste generated in the County is shipped to privately own and operated permitted TSD facilities located in nearby counties. In most cases, this hazardous waste is transported for ultimate disposition at out-of-state TSD facilities.

Hazardous waste generation is projected to increase consistent with employment trends resulting in a projected generation of 16,439 tons in 2019. Existing permitted private contractors serving the region are anticipated to adequately serve County needs.

#### **5.3.4.2 Special Medical Waste**

Special medical waste is generated by hospitals, doctors' offices and medical testing and research laboratories. Special medical waste includes utensils, bandages, containers or any other material issuing from all human patient care, diagnosis and surgical areas; animal bedding and feces; disposable laboratory equipment, and their contents; materials resulting from and/or exposed to infectious animal care and laboratory procedures; all disposable needles and syringes; all other

disposable materials from out-patient care for human and animal patients, where presence of pathogenic organisms are diagnosed or suspected.

MDE regulates special medical waste incinerators. At present, no permitted special medical waste incinerator operates in Montgomery County. All special medical waste generated within the County is transported for disposal at private facilities outside of Montgomery County. MDE licenses special medical waste haulers. Special medical waste reported by licensed haulers was 1,424 tons for Fiscal Year 2008. Since controlled medical waste is projected to increase at the same rate as County employment growth, the projected County generation for the Year 2019 is 1,636 tons. The County has not received reports of insufficient special medical waste disposal capacity at private facilities serving County generators.

#### **5.3.5 Animal Carcass Waste**

As indicated in Table 3.5, animal carcass waste generation was 145 tons for Fiscal Year 2008.

The Montgomery County Police Department, Division of Animal Services, contracts with a private renderer to dispose of the dead animals found on County grounds or highways. The County collects approximately 15 tons of animal carcasses, primarily domestic pets and deer, per year. In addition, the Montgomery County Animal Shelter estimates that it generates 10 to 12 tons of animal carcasses per year.

No animal waste rendering facilities operate in Montgomery County. Private renderers in Virginia and Pennsylvania serve the County's needs.

One permitted pet crematoria (with a capacity of 36 tons per year) operates in Montgomery County.

Animal waste is projected to increase at the same rate as population growth. Over the next ten years, existing pet crematoria and cemeteries and out-of-County rendering facilities are anticipated to continue to serve County animal carcass waste generators.

### **5.3.6 Bulky and Special Wastes**

#### **5.3.6.1 Bulky Waste**

Bulky wastes include large household appliances (white goods), other scrap metals and building materials. According to Table 3.6, 85,957 tons of bulky wastes were generated in Montgomery County during Fiscal Year 2008.

Once received at the County Transfer Station, bulky items typically are diverted away from the RRF. White goods and other scrap metals are sent for recycling. Reusable building materials are sent to a non-profit organization in Baltimore for use in housing projects throughout Maryland. Other bulky items that are not suitable for disposal at the RRF are included with other nonprocessible waste sent for disposal at a private landfill in Brunswick County, Virginia.

Bulky waste generation of scrap metal and white goods is projected to be 96,237 tons in Fiscal Year 2019. Existing facilities and programs are sufficient to process these materials for the next decade.

#### **5.3.6.2 Automobiles**

Table 3.6 indicates that an estimated 59,361 tons of automobile waste was generated in the County in Fiscal Year 2008. As explained in Chapter 3, annual

generation is expected to grow in proportion to population increase over the next decade.

Two automobile parts salvage companies operate in Montgomery County. However, no full scale automobile recycling facilities exist within the County. Retired automobiles are hauled to auto recyclers located outside of the County. No further County involvement in automobile waste management is anticipated in the next decade.

#### **5.3.6.3 Scrap Tires**

According to Table 3.6, approximately 9,512 tons of scrap tires were generated in Fiscal Year 2008. Federal guidelines suggest that future scrap tire generation will be directly proportional to population growth. Accordingly, 10,650 tons of tires are projected to be scrapped in the County in Fiscal Year 2019.

The State of Maryland has developed a scrap tire program for the management of scrap tires in Maryland. Many auto service centers in the County arrange for private recycling of their customers' tires at facilities outside of the County. County residents may drop off five or fewer scrap tires per year at the County's Transfer Station for recycling. In Fiscal Year 2008, the County received and recycled approximately 193 tons of scrap tires.

Illegal dumping of tires in the County usually occurs in relatively small quantities (usually less than 50-100 tires) at roadsides and in wooded areas. No large illegal tire dumps are known to exist in the County, according to a 1993 inventory of tire dumps conducted by the State. The number of scrap tires dumped illegally in the County is not known.

The existing scrap tire system in Maryland should be sufficient to handle County scrap tire generation through the life of this plan.

### **5.3.7 Wastewater Treatment Biosolids**

As stated in Section 5.2.2.1.b. above, the Seneca Wastewater Treatment Plant has been expanded to accommodate future demand.

The WSSC share of biosolids (80 dry tons per day) from the Blue Plains<sup>3</sup> WWTP is presently being land applied to agricultural land under contracts managed by the WSSC. Improvements to the Blue Plains solids handling and processing systems are being made in an effort to improve the long-term viability of this beneficial recycling process for biosolids. In 1996, the Blue Plains Regional Committee (BPRC) completed a study called *The Blue Plains Regional Biosolids Management Plan*. The BPRC subsequently recommended a significant capital improvement program at Blue Plains to implement the improvements recommended in this study. This plan was the basis for an expanded biosolids management plan developed by the DC Water and Sewer Authority (WASA). In 2008, WASA updated the Blue Plains Biosolids Management Plan to include thermal hydrolysis, a process that reduces the number of digesters needed to process the biosolids from Blue Plains. WASA is evaluating a comprehensive biosolids processing program that is expected to be proposed in the FY 2010 WASA Capital Improvements Plan. WSSC will be responsible for approximately 45 percent of the capital program costs based on their allocation of capacity at the Blue Plains facility.

The County's biosolids management plan is detailed in the *Comprehensive Water and Sewer Plan for Montgomery County*.

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<sup>3</sup> 1985 Inter-Municipal Agreement (IMA).

### **5.3.8 Septage**

Current facilities and services are adequate to manage County septic and holding tank biosolids generation through the life of the plan. The County's plan for septage management is detailed in the *Comprehensive Water and Sewer Plan for Montgomery County*.

### **5.3.9 Other Wastes**

As stated in Chapter 3, Montgomery County generates insignificant quantities of agricultural wastes and mining wastes.

Litter and recreational wastes are considered MSWs and are included in the tonnage estimates in Section 5.3.1 of this Chapter.

Street sweepings are included with the nonprocessible waste transported to a privately operated landfill in Brunswick County, Virginia.

## **5.4 SYSTEM FINANCING**

Basic cost information and fiscal data relating to the implementation of this Plan may be found in the approved Annual Operating Budget and the Approved Capital Improvements Program for DEP. In addition, in conjunction with the annual preparation of the County Executive's Recommended Operating Budget, DEP will prepare a document detailing the current costs and the projected six-year costs of each solid waste management program. Assumptions regarding the costs and workload of the various programs also will be detailed. DEP also will provide long term projections regarding the revenues collected for solid waste programs and the fees that will be necessary to support the program. Either in budget documents or in supplemental

documents, DEP also will calculate the marginal cost of any new recycling or other solid waste programs proposed by the County Executive. These documents will be available at County public libraries and at the offices of DEP.

#### **5.4.1 Budgeting**

##### **5.4.1.1 General Budgeting**

The County Executive is responsible for the preparation of the annual budget and its amendments for submission to the County Council for appropriate action. OMB assists the County Executive and the Chief Administrative Officer with all budget matters, research, program evaluation and such other related matters as may be assigned.

##### **5.4.1.2 Solid Waste Management Budget Preparation**

The Director of DEP prepares and submits to the County Executive a recommended budget for operations and capital improvements and requests for supplemental appropriations, as needed, related to solid waste management.

##### **5.4.1.3 Biosolids Management Budget Preparation**

DEP reviews the budget requests of WSSC which are related to the County's activities in solid waste management and makes appropriate recommendations to the County Executive.



## **5.4.2 Solid Waste Revenue Sources**

County law requires that the County at least annually set charges for solid waste services to equal expenses. The County funds its solid waste system primarily by means of four revenue streams: (1) tipping fees, (2) systems benefit charges, (3) refuse collection and leaf vacuuming charges, (4) revenues and credits from the sale of methane, recyclables and compost.

Revenues from these sources provide an adequate and reliable source of funding to finance County solid waste programs, including all recycling services. Revenues raised from the four sources listed above go directly into an independent, legislatively established Solid Waste Enterprise Fund which finances County solid waste programs exclusively.

### **5.4.2.1 Tip Fees**

The County charges separate per-ton fees (\$/ton “tipping fees”) for accepting MSW (known as the “refuse tipping fee”), and for accepting C&D (charged for waste delivered in open top roll-off boxes). A distinct tipping fee is also set for accepting yard waste. All tipping fees are set by the County Council and are calculated so as to assure full recovery of County solid waste system costs, together with all other creditable revenue sources. Within these constraints, the tipping fees can also be set so as to influence behavior by incentive.

The refuse tipping fee is set, and periodically adjusted, relative to the regional market, such that MSW delivered by private haulers to the Transfer Station during the forthcoming fiscal year will match, as nearly possible, a target of 85 percent to 92 percent of the RRF permit capacity (e.g., 558,450 to 604,440 tons per year based on waste with the design point heating value of 5,500 BTU/pound).

The C&D tipping fee shall be set, at a minimum, to fully cover the County's cost of handling this special type of waste but shall be set at a higher rate than the refuse tipping fee so as to reflect the County's preference to use the RRF for processing MSW. C&D is identified, for the purpose of applying this fee, by virtue of its generally being delivered for disposal in open top roll-off boxes. Finally, the refuse and C&D tipping fees shall be no lower than so as to reasonably assure that combined deliveries to the County do not exceed the 821,500 TPY annual limitation of the Transfer Station's refuse disposal permit.

Fluctuations in economic activity affecting overall waste generation, relative changes in the use of regional disposal options by private collectors and changes in recycling performance by all sectors will continue to affect the amount of MSW delivered to the County for disposal in any year. Influences beyond the County's direct control include pre-existing private sector disposal contracts at regional facilities and regional pricing pressures. These, in particular can affect response time (i.e. the time it takes for the market to respond to a revised County tip fee). Accordingly, DEP will deploy, develop and maintain contingency plans and operational capacity that can be used in conjunction with refuse and C&D tipping fee adjustment to manage the amounts of incoming MSW and C&D. The contingency plans may include controlled bypass of processible waste while tipping fee adjustments take effect.

Tip fees for refuse from non-municipal, single-family residences and multi-family dwellings in buildings comprised of six or fewer dwelling units are collected on the tax bill as Disposal Fees. All other tip fees are charged as waste is delivered at the Transfer Station.

#### **5.4.2.2 Systems Benefit Charges**

Systems benefit charges are imposed on residential and non-residential generators of solid waste and can include both a base charge and an incremental charge. Base systems benefit charges, after offsets from tip and disposal fees, cover all or a portion of the cost of developing and maintaining the basic programs and facilities necessary to fulfill the County's obligation to provide for the management of solid waste generated within the County. Revenues from base systems benefit charges, together with refuse tip fees and disposal fees, provide for all system costs not covered by another fee. These costs include system administration, waste reduction programs, debt service on existing facilities and the fixed cost of disposal programs and facilities.

The County Council annually establishes system benefit charge rates and tip fees at a level necessary to raise sufficient revenues to fund County Council approved solid waste activities and system expenses. Base system benefits charges are derived by allocating revenue generation requirements among the single-family residential, multi-family residential and non-residential sectors in proportion to each sector's contribution to overall County waste generation. Base system benefit charges are calculated by dividing the total base system benefit charge revenue generation required from each sector, less tip fee offsets from that sector, by the total number of billable units in that sector.

From the non-residential sector, the County may charge and collect the required base and incremental systems benefit charges by a variety of means. Currently, the County establishes, under Executive Regulation 9-99 (which can be amended without amending this Plan), non-residential system benefit charges which vary from property to property according to (1) the average waste generation rate for different non-residential land use categories; and (2) the property's improved gross floor area (measured by 2,000 square foot units). There are five categories of non-

residential generators ranging from low generators to high generators. Non-residential solid waste generators in specific land uses are categorized into a generator category based on waste generation studies. The charge for a generator is then multiplied by the number of 2,000 square foot units attributable to that generator.

Incremental system benefit charges cover all or a portion of incremental services received by some, but not all, generators of solid waste. Incremental system benefit charges are assessed to each generating sector (single-family residential, multi-family residential, and non-residential) for services provided specifically to that sector. For example, each single-family household (in unincorporated areas of the County) that receives curbside recycling services is charged for its share of curbside recycling program costs. Incremental system benefit charges for the multi-family residential and non-residential sectors cover educational, enforcement and outreach services provided directly for the benefit of each of those two sectors.

#### **5.4.2.3 Refuse Collection and Leaf Vacuuming Charges**

The County has separate revenue streams to fund refuse collection and leaf vacuuming services. Single-family residences within the Solid Waste Collection District of the County are assessed charges to cover the costs of refuse collection services. Single-family and multi-family residences within the Leaf Recycling Service Area of the County are assessed charges to cover the costs of leaf vacuuming services.

#### **5.4.2.4 Revenues and Credits**

The County Solid Waste Enterprise Funds receive revenue from the sale of recyclable materials recovered at its Materials Recovery Facility in Derwood, Maryland. In addition, the County expects to begin receiving revenue from the sale of electricity generated by methane extracted from closed landfills beginning in mid-2009.. In addition, the County receives economic credit, in the form of reduced operating costs

paid to contractors, as a result of the revenue from the sale of electricity and ferrous metals from the RRF, and the sales of compost products produced at the Yard Waste Composting Facility and also from mulch produced from grinding brush and natural wood waste at the Shady Grove Processing Facility and Transfer Station. Revenues are also derived from interest earned on any reserves held by on behalf of the Solid Waste Funds. Finally, minor amounts of revenues are derived from miscellaneous sources such as license fees and rent. Annually recommended System Benefit Charges, Refuse Collection and Leaf Vacuuming Fees discussed above are calculated net of all projected revenues and yet fully fund operating budgets in accordance with the Rate Covenants of the Master Authorization and Chapter 48 of the County Code.

#### **5.4.3 Biosolids Management Revenue Sources**

WSSC funds the management of biosolids through waste water treatment and water supply user fees.

#### **5.4.4 Plan of Action: System Financing**

The County will continually monitor revenue generation methods to assure that each ratepayer contributes a fair and equitable share while generating sufficient resources to fund all necessary solid waste programs and services. The County will keep abreast of current market conditions to maintain tipping fees that remain competitive. Tip fees affect the amount of waste received in County facilities and these fees will be used as appropriate to manage the demand on County facilities. Annually, system benefit charge rates will be reviewed and calculated in a manner that fairly allocates costs among different categories of ratepayers. Refuse collection and leaf vacuuming charges will be adjusted, as necessary, to reflect actual program costs. Finally, the County will monitor commodity markets to assure the Solid Waste Fund

receives the most favorable revenues and credits possible from the sale of recovered energy from closed landfills and recyclables.